VOLUME CONTENTS

CONTENTS VOL. 73 NO. 1 1992

J. Lützen and Å. Jespersen. A study of the morphology and biology of *Thompsonia littoralis* (Crustacea: Cirripedia: Rhizocephala) **1**

Å. Franzén and M. Ferraguti. Ultrastructure of spermatozoa and spermatids in *Bonellia viridis* and *Hamingia arctica* (Echiura) with some phylogenetic considerations **25**

O. Munk. Accessory escal gland (AEG) in some deep-sea anglerfishes **33**

C. J. Pfeiffer. Intestinal ultrastructure of *Nerita picea* (Mollusca: Gastropoda), an intertidal marine snail of Hawaii **39**

Young Hwan Lee and Ae Sook Kwon. Ultrastructure of spermiogenesis in *Hyla japonica* (Anura, Amphibia) **49**

I. Schinko, I. C. Potter, U. Welsch and P. Debbage. Structure and development of the notochord 'elastica externa' and nearby components of the elastic fibre system of agnathans **57**

K. Tsuneki. A systematic survey of the occurrence of the hypothalamic saccus vasculosus in teleost fish **67**

CONTENTS VOL. 73 NO. 2 1992

J. M. Jørgensen. The electrosensory cells of the ampullary organ of the transparent catfish (*Kryptopterus bicirrhus*) **79**

P. Burkhardt-Holm and S. Holmgren. A study of the alimentary canal of the brachyopterygian fish *Polypterus senegalus* with electron microscopy and immunohistochemistry **85**

N. A. Watson, J. B. Williams and K. Rohde. Ultrastructure and development of the eyes of larval *Kronborgia isopodicola* (Platyhelminthes, Fecampiidae) **95**

A. Chiba, T. Kon and Y. Honma. Ultrastructure of the spermatozoa and spermatophores of the zuwai crab, *Chionoecetes opilio* (Majidae, Brachyura) **103**

R. Dallai, P. L. Bellon, S. Lanzavecchia and B. A. Afzelius. Sperm axoneme in some apterygote insects examined by computer-aided image analysis **109**

W. E. Bemis and R. G. Northcutt. Skin and blood vessels of the snout of the Australian lungfish, *Neoceratodus forsteri*, and their significance for interpreting the cosmine of Devonian lungfishes **115**

CONTENTS VOL. 73 NO. 3 1992

G. W. Rouse. Ultrastructure of the spermathecae of *Parafabricia ventricingulata* and three species of *Oriopsis* (Polychaeta: Sabellidae) **141**

A. M. N. Kalantan, M. Arfin and M. S. Alyousif. Chemical nature and mode of stabilization of egg-shell in *Helicometra pulchella* (Rudolphi, 1819) (Digenea: Opecoelidae) **153**

L. Alibardi. Glial cell composition and ultrastructure of the caudal spinal cord of young and adult tuataras, *Sphenodon punctatus* **157**

A. B. Tzetlin, G. Purschke, W. Westheide and M. V. Saphonov. Ultrastructure of enteronephridia and general description of the alimentary canal in *Trochonerilla mobilis* and *Nerillidium troglochaetoides* (Polychaeta, Nerillidae) **163**

CONTENTS VOL. 73 NO. 3 1992 (Continued)

G. Zaccone, J. M. Lauweryns, S. Fasulo, G. Tagliafierro, L. Ainis and A. Licata. Immunocytochemical localization of serotonin and neuropeptides in the neuro-endocrine paraneurons of teleost and lungfish gills **177**

M. Nebelsick. Sensory spots of *Echinoderes capitatus* (Zelinka, 1928) (Kinorhyncha, Cyclorhagida) **185**

W. Westheide and C. Watson Russell. Ultrastructure of chrysopetalid paleal chaetae (Annelida, Polychaeta) **197**

CONTENTS VOL. 73 NO. 4 1992

F. Marmo, A. P. Ariani, G. Balsamo and B. Avallone. Scanning electron microscopy and X-ray diffraction studies of the macular crystals in the chondrostean fish *Erpetoichthys calabaricus* (Smith) **203**

M. C. Thorndyke, B. D. Crawford and R. D. Burke. Localization of a SALMFamide neuropeptide in the larval nervous sytem of the sand dollar *Dendraster excentricus* **207**

M. S. Y. Lee and B. G. M. Jamieson. The ultrastructure of the spermatozoa of three species of myobatrachid frogs (Anura, Amphibia) with phylogenetic considerations **213**

A. C. Durán, V. Sans-Coma, J. M. Arqué, M. Cardo, B. Fernández and D. Franco. Blood supply to the interventricular septum of the heart in rodents with intramyocardial coronary arteries **223**

K. Rohde and N. A. Watson. Ultrastructure of the flame bulbs and protonephridial capillaries of *Artioposthia* sp. (Platyhelminthes, Tricladida, Geoplanidae) **231**

G. Lambert. Ultrastructural aspects of spicule formation in the solitary ascidian *Herdmania momus* (Urochordata, Ascidiacea) **237**

T. G. Langecker and H. Wilkens. Comparative ultrastructural studies on the pineal organ of the Mexican catfish *Rhamdia laticauda* Heckel, 1858 and one of its cave-dwelling derivates (Pimelodidae, Teleostei) **247**

M. M. Antoniazzi and M. Silveira. Pharyngeal and gastrodermal ultrastructure of *Prorhynchus stagnalis* Schultze, 1851 (Turbellaria, Lecithoepitheliata) **255**

P. D. Reynolds. Distribution and ultrastructure of ciliated sensory receptors in the posterior mantle epithelium of *Dentalium rectius* (Mollusca, Scaphopoda) **263**

CONTENTS VOL. 73 NO. 5 1992

E. Dahl and J.-O. Strömberg. Introduction: discovering crustacean diversity **271**

G. Fryer. The origin of the Crustacea **273**

J. Bergström. The oldest arthropods and the origin of the Crustacea **287**

D. E. G. Briggs. Phylogenetic significance of the Burgess Shale crustacean *Canadaspis* **293**

W. D. I. Rolfe. Not yet proven Crustacea: the Thylacocephala **301**

D. Walossek and K. J. Müller. The 'alum shale window'—contribution of 'Orsten' arthropods to the phylogeny of Crustacea **305**

W. D. I. Rolfe. Discussion following Walossek & Müller **313**

R. R. Hessler. Reflections on the phylogenetic position of the Cephalocarida **315**

W. D. I. Rolfe. Synopsis of main points arising from discussion on 'Crustacean evolution and the significance of early fossils'. Chairman: D. E. G. Briggs **317**

CONTENTS VOL. 73 NO. 5 1992 (Continued)

W. A. Newman. Origin of Maxillopoda **319**

J. T. Høeg. The phylogenetic position of the Rhizocephala: are they truly barnacles? **323**

G. A. Boxshall and R. Huys. A homage to homology: patterns of copepod evolution **327**

G. A. Boxshall. Synopsis of group discussion on the Maxillopoda. Co-chairmen: W. A. Newman & G. A. Boxshall **335**

E. Dahl. Aspects of malacostracan evolution **339**

J. W. Wägele. Synopsis of discussion on 'Relationships between malacostracan groups and reconstructions of the ur-malacostracan'. Chairman: Les Watling **347**

L. Watling. Holistic pattern analysis as an alternative to pattern cladistics in hypothesizing crustacean phylogenetic sequences **349**

J. W. Wägele. Co-evolution between fishes and crustaceans **355**

J. W. Martin and M. S. Laverack. On the distribution of the crustacean dorsal organ **357**

R. Elofsson. To the question of eyes in primitive crustaceans **369**

L. G. Abele, T. Spears, W. Kim and M. Applegate. Phylogeny of selected maxillopodan and other crustacean taxa based on 18S ribosomal nucleotide sequences: a preliminary analysis **373**

G. D. F. Wilson. Computerized analysis of crustacean relationships **383**

G. A. Boxshall and J.-O. Strömberg. Postscript: a commentary on the results of the workshop **391**

Volume Contents and Author Index Volume 73, 1992 **i**